

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1-19, 21 and 22 are currently being prosecuted. The Examiner is respectfully requested to reconsider his rejections in view of the amendments and remarks as set forth below.

Claim Objections

The Examiner objected to claim 21 has having improper dependency. This has now been corrected.

Rejection under 35 U.S.C. § 103

Claims 1-9 stand rejected under 35 U.S.C. § 103 as being obvious over Nakashima et al. (U.S. Patent No. 6,141,123) in view of Shirochi (U.S. Patent No. 6,075,581) and Tedesco et al. (U.S. Patent No. 5,471,327). This rejection is respectfully traversed.

The Examiner cites Nakashima et al. to show a method of fabricating a hologram diffuser including providing a substrate, forming a resin layer and forming a hologram pattern. The Examiner admits that Nakashima et al. does not show forming the smoothing film and forming a hologram diffuser which uniformly diffuses light in all directions.

The Examiner cites the Shirochi reference to show a liquid crystal display having a diffraction grating 51 with an adhesive resin layer. The Examiner equates this layer with the smoothing layer.

The Examiner cites the Tedesco et al. reference to show a hologram diffuser which uniformly diffuses light in all directions. The Examiner feels it would have been obvious to make a hologram diffuser to uniformly diffuse light in all directions as taught by Tedesco et al.

Applicants submit that claim 1 is not obvious over this combination of references. First, Applicants have amended claim 1 to incorporate the limitation of the pressing step from claim 3. Claim 1 now makes it clear that the hologram pattern is formed by pressing an original pattern into the resin layer. The Examiner, in regard to claim 3, has previously indicated that the pressing step is formed using the roller 229 in Nakashima. However, Applicants disagree with the Examiner's understanding of the reference in this regard.

While the specification indicates that a roller 229 is used for the film 219 to be applied to the photographed original 213, it is clear that the pattern is not formed by the pressing. Instead, the pressing only holds the two films in position so that the laser

light 20 can irradiate the original as to copy the photograph onto the photopolymer 210 to make it a hologram. Thus, while there is a pressing of sorts using roller 229, it does not press the hologram into the resin, but rather, the hologram is transferred using a photographic effect. Claim 1 now states that the hologram pattern is formed by pressing an original hologram into the resin layer. This is clearly not seen in Nakashima et al., and accordingly, claim 1 is allowable over this combination of references.

Claims 2-9 depend from claim 1 and as such are also considered to be allowable. In addition, these claims recite other features which make these claims additionally allowable.

Furthermore, Applicants submit that it would not be obvious for one of ordinary skill in the art to combine the three references to form the present claimed invention. The Examiner recited no motivation why one skilled in the art would use the splitting layer as shown in Shirochi in the Nakashima et al. device. The Examiner has also not provided any motivation for one skilled in the art to use the Tedesco et al. teachings of the uniform diffusion light into the Nakashima et al. system. Applicants submit that it would not be obvious to one of ordinary skill in the art to add these features Nakashima et al.

Accordingly, Applicants submit that claims 1-9 define over this three way combination of references.

Claims 10-17, 18, 21 and 22 stand rejected under 35 U.S.C. § 103 as being obvious over Shirochi in view of Tedesco et al. This rejection is respectfully traversed.

At the outset, it is pointed out that claim 10 has been amended to include additional limitations. The result of the uniform diffusion of light by the hologram layer is now described as having a wide visual angle. Secondly, the smoothing film is now described as having a different refractive index from that of the hologram layer. This limitation is a more generic form of claim 11. Applicants submit that claim 10, as amended, overcomes the rejection of the combination of Shirochi and Tedesco et al. This is clearly seen since claim 11 describes the index of refraction and is not rejected over these two references. Instead, the Examiner required a third reference to teach this feature. Accordingly, Applicants submit that claim 10 and the claims that depend therefrom define over this two way combination. Claim 10 will be further considered in regard to the three way combination discussed below.

Claims 11-14 and 19 stand rejected under 35 U.S.C. § 103 as being obvious over Shirochi in view of Tedesco et al. and Nakashima et al. This rejection is respectfully traversed.

Claim 10 not only includes the different indices of refraction, but also now describes that the uniform diffusion of light in all orientations is to obtain a wide visual angle for the device. Applicants submit that the combination of the three references does not teach all of the features of the claimed invention. First, as discussed above, Applicants submit that it would not be obvious for one of ordinary skill in the art to combine the three references. There is no motivation seen for making such a combination. The Examiner appears to be taking pieces from different devices to combine arrangements not suggested by any of the references. Accordingly, Applicants submit that claim 10 and the claims that depend therefrom would not be obvious over this combination.

Furthermore, Applicants submit that it would not be obvious to have displayed the hologram layer with uniformly diffused light in all orientations to obtain a wide visual angle since this feature is not clearly seen in the references. Further, Applicants submit that the references do not clearly show a smoothing layer as presently claimed since Shirochi does not show a smoothing layer,

but rather, an adhesive transparent resin layer. Accordingly, Applicants submit that claim 10 is allowable over this combination of references.

Claims 15 and 16 stand rejected under 35 U.S.C. § 103 as being obvious over Shirochi in view of Tedesco and Abileah (U.S. Patent No. 5,629,784). This rejection is respectfully traversed.

Since claims 15 and 16 depend from claim 10, which now includes a limitation from claim 11, Applicants submit that this three way combination must now be considered a four way combination including the Nakashima et al. reference. Applicants submit that these claims are allowable based on their dependency from allowable claim 10.

Furthermore, Applicants submit that it would not be obvious to one of ordinary skill in the art to add the teachings of Abileah et al. to the teachings of the other three references as discussed above. The Examiner has not properly shown motivation for adding an additional piece to this combination. Accordingly, Applicants submit that these claims are additionally allowable.

Conclusion

In view of the above remarks, it is believed that the claims clearly distinguish over the patents relied on by the Examiner,

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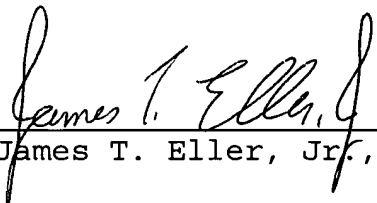
either alone or in combination. In view of this, reconsideration of the rejections and allowance of all the claims are respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert F. Gnuse (Reg. No. 27,295) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.


If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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